

ABSTRACT

A vial adapter having a needle-free valve, a sharpened cannula used to perforate a vial's rubber stopper, and a circular array of claws of different lengths to engage vial closures of different diameters. The array of claws includes a first set of claws each having a first length extending inwardly from the periphery of the housing of the adapter and a second set of claws alternating with the first set of claws and each having a longer length. The second set of claws are mounted so that they deflect and plastically deform out of the way in the case where the adapter is engaged with a vial that exceeds a predetermined size. The housing includes a shroud that is at least as long as the sharpened cannula to protect medical personnel who use the adapter from inadvertent punctures. The needle-free valve includes a resiliently deformable piston element with a naturally open bore. The interior of the piston provides a fluid flow path through the adapter. In one embodiment, the first set of claws of the adapter may be used with a vial closure of at approximately 20 mm in diameter and the second set of claws may be used with a vial closure of approximately 13 to 17 mm in diameter.

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